

Remarks/Arguments

Claims 1 and 11-21 are pending in the application. Claims 1 and 17 have been amended to define more clearly the claimed invention. Claims 3-10 and 14-21 were withdrawn by the reply mailed May 23, 2005, but claims 14-21 are now reinstated and claims 2 and 22-27 are withdrawn due to the Examiner's change in the election/restriction. It is believed and intended that no new matter has been added by this amendment. Reconsideration and allowance of all claims are respectfully requested in view of the following remarks.

I. Preliminary matters

The Applicant gratefully acknowledges the Examiner's indication of receipt of the Information Disclosure Statements filed March 16, 2004 and June 29, 2005. In addition, the Applicant is grateful for the Examiner's approval of the drawings filed March 16, 2004.

II. Election/restriction

In the August 12, 2005 Office Action, the Examiner indicates that he has reconsidered the Requirement for Election of April 21, 2005. The Applicant believes that the Examiner has withdrawn the restriction requirement of the April 21 Office Action by his August 12 indication that the methods disclosed in Figs. 8-9 are now considered to be part of Invention I. The Examiner is respectfully requested to confirm or correct this belief. Claims 1-27 apply to Invention I, the only remaining invention in the instant application.

In response to the Examiner's change to the election/restriction status, the Applicant wishes to revisit the election of species mailed May 23, 2005. The

Applicant now elects, without traverse, Species E (including the subject matter of Figs. 7-9) for further prosecution. At least claims 1 and 11-21 pertain to the currently-elected Species E. At least claim 1 is generic to all Species identified by the Examiner.

III. Specification objection

The Examiner objected to page 17, line 20 of the specification. Paragraph 44 of the specification has been amended as set forth above, and in a manner believed to overcome this objection.

IV. Claim rejections under 35 U.S.C. § 112

The Examiner rejected claims 1 and 14-21 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1 and 17 have been amended to overcome the rejection. Such amendments are not made in response to the prior art and do not narrow the scope of the claims.

Regarding claim 1, line 5 recites “one controlling damping element”, yet the Examiner suggests that the line should instead read “one controllable damping element”. The Applicant respectfully differs with this characterization because the Applicant intends that “controlling damping element” refers to a complete feedback structure including sensors, controllers, and electromagnetic springs. Thus, claim 1 has been amended to replace “controlling” with “active” to more clearly describe the device, as well as address the Examiner’s concern. One of ordinary skill in the art would understand that active damping is distinct from passive damping, and that active damping is consistent with the structure disclosed in the specification.

Additionally, claim 17 has been amended to correct the typographical error cited by the Examiner. Therefore, it is respectfully submitted that claims 1 and 17 as amended satisfy 35 U.S.C. § 112, and the Examiner is respectfully requested to withdraw this rejection.

Regarding claims 14-21, the Examiner's rejection under 35 U.S.C. § 112 lies in his uncertainty over whether the Applicant intends to claim mass 714 or mass 750. Mass 714 of Figure 7 corresponds to the mass of claim 14, and is coupled to hub 705 via spring 712. However, mass 714 is also coupled to hub 705 via spring 752 and sheath 770. Spring 752 is connected to outer ring 750, which, in turn, is rigidly affixed to hub 705 (see Specification ¶ 044). Thus, mass 714 is coupled to hub 705 via a first spring 712, and also via a second spring 752 and electromagnetic bond (sheath 750), as claimed. The Examiner is therefore respectfully requested to interpret claims 14-21 in light of this explanation (instead of using the preamble he suggests on page 3 of the August 12 Office Action), and to withdraw the rejection of claims 14-21 under 35 U.S.C. § 112.

V. Claim rejections under 35 U.S.C. § 102

The Examiner rejected claims 1, 11, 12, 14, and 17-20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,637,169, issued January 25, 1972 to Barry E. Tossman et al. (hereafter referenced as '169). The Applicant respectfully traverses this rejection for at least the following reasons.

Specifically, as amended, claim 1 recites at least one passive damping element and one active damping element. The Applicant defines an active damping element in ¶ 044 as one wherein self-tuning is the result of electromagnetic feedback

and where the currents are varied, the degree of coupling is adjusted, thus providing for a variance in spring force. '169 fails to teach, show, disclose, or suggest any active damping element, much less one where self-tuning is the result of electromagnetic feedback. Likewise, '169 does not anticipate an active damping element where the currents are varied and the degree of coupling is adjusted, thus providing for a variance in spring force. Rather, '169 teaches magnetic structures 14 and 15 that are a combination of permanently magnetized core portions 16 and chargeable portions 17 (col. 2, lines 7-12). Furthermore, the magnetic structures 14 and 15 of '169 are not connected to any feedback system, as is inherent in an active damping element.

Likewise, the substitution of permanent magnet 34 and field coil 36 in place of magnetic structures 14 and 15 would result in similar deficiencies. Again, there is no feedback member used with permanent magnet 34 and field coil 36; and although field coil 36 is an electromagnet, it is energized by a constant current source.

Since '169 does not teach, show, disclose, or suggest the subject matter of claim 1, it is respectfully submitted that the present claim 1 is allowable over '169, and such allowance is respectfully requested.

Regarding claim 11, the Examiner's rejection based on the anticipation of '169 is respectfully traversed, as '169 does not teach, show, disclose, or suggest the subject matter of claim 11. Specifically, claim 11 recites a damper for reducing torsional vibrations of a rotating shaft, said damper comprising accelerometers coupled to a mass and the shaft for detecting the relative motion of said mass and said shaft. In his rejection the Examiner states that "the accelerators [sic] are not

shown but inherent since ['169] uses the angular momentum" (Office Action pg. 4).

However, '169 simply cannot imply the function or even the existence of the claimed accelerometers, since '169 does not provide for electronic feedback.

Similarly, claim 11 also recites a current generator for adjusting an electromagnetic bond whereby a second spring is coupled to the mass. In his rejection, the Examiner states that "a current generator is not shown but inherent since in Column 4, lines 6 and 7, ['169] discloses that the current is fed to the coils 18" (Id. at 5). However, '169 does disclose a current generator; Col. 2, lines 70-71 of '169 disclose that the field coil 36 is adapted to be energized from a constant source. Thus, '169 teaches away from a current generator that can adjust the electromagnetism output, because the *constant source* current generator of '169 cannot adjust the electromagnetism output. Therefore, because '169 does not teach, show, disclose, or suggest the subject matter of claim 11, it is respectfully submitted that claim 11 is allowable over '169, and such allowance is respectfully requested.

Claim 14 recites a method including the step of calculating applied current charges that, when applied by a current generator to an electromagnetic bond, change the total effective spring constant and improve dampening of the detected undesired harmonic motion. '169 does not teach, show, disclose, or suggest that the '169 device performs any calculations--instead, the '169 device is pre-tuned by the formula of col. 3, line 10. Therefore, since '169 fails to teach, show, disclose, or suggest the subject matter of claim 14, it is respectfully submitted that Claim 14 is allowable over '169, and such allowance is respectfully requested.

For at least the above reasons, '169 does not anticipate claims 1, 11, and 14 under 35 U.S.C. § 102(b) and the Examiner's rejection should be withdrawn. Since claims 12 and 17-20 are each dependent upon one of claims 1, 11, and 14, these claims are patentable at least by virtue of this dependency, and allowance of claims 1, 11, 12, 14, and 17-20 is respectfully requested.

VI. Claim rejections under 35 U.S.C. § 103

The Examiner rejected claims 13 and 21 under 35 U.S.C. § 103(a) as being unpatentable over '169 in view of U.S. Patent No. 6,598,717, issued July 29, 2003 to Kon-Well Wang et al. Since claims 13 and 21 are dependent upon claims 11 and 18, which are allowable as set forth above, claims 13 and 21 are patentable at least by virtue of this dependency. Allowance of claims 13 and 21 is respectfully requested.

VII. Allowable subject matter

The Applicant gratefully acknowledges the Examiner's indication that claims 15 and 16 contain allowable subject matter. The Applicant respectfully requests postponement of the Examiner's requirement that claims 15 and 16 be rewritten in independent form until such time as the Examiner has reviewed and commented upon the present amendments and remarks.

VII. Conclusion

In view of the foregoing, reconsideration and allowance of this application are believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or

telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 20-0090. Please also credit any overpayments to this Deposit Account.

Respectfully submitted,



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